



Decay studies of neutron deficient mendelevium isotopes

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In recent experiments performed at the velocity filter SHIP at GSI enhanced decay data of ^{247}Md and ^{250}Md were obtained.

^{247}Md was produced in several experiments at SHIP in the reaction $^{209}\text{Bi}(^{40}\text{Ar}, 2n)^{247}\text{Md}$. In a recent study a tentative decay scheme was presented [1]. Main features of a new study was to identify the decay of ^{247g}Md into the ground-state of the daughter nucleus ^{243}Es , to obtain more detailed information about the decay of the isomeric state ^{247m}Md , and to identify a spontaneous fission branch of ^{247g}Md [2]. The results will be discussed, and an improved decay scheme will be presented.

^{250}Md was produced as third member of the alpha – decay chain starting from ^{258}Db . A thorough analysis of the decay data revealed the existence of two long-lived low-lying levels partly decaying by alpha-emission [3]. The results will be compared with a theoretically predicted level scheme [4].

Discovery of ^{244}Md was recently reported from experiments performed at the BGS, LNBL, Berkeley [5] and TASCA, GSI, Darmstadt [6]. The results were conflicting. A critical comparison of the data, including results obtained for ^{245}Md at SHIP about 25 years ago [7], showed that the BGS data rather have to be attributed to ^{245}Md [8]. This feature will be discussed.

References

- [1] S. Antalic et al. EPJA 43,35 (2010)
- [2] F.P. Heßberger et al. (in preparation)
- [3] M. Vostinar et al. EPJA 55:17 (2019)
- [4] P.C. Sood et al. Intern. Journ. of Mod. Phys. E, Vol. 9, No. 4, 309 (2000)
- [5] J.L. Pore et al., PRL 124, 252502 (2020)
- [6] J. Khuyagbaatar et al., PRL 125, 142504 (2020)
- [7] V. Ninov et al. Z. Phys. A 356, 11 (1996)
- [8] F.P. Heßberger et al. PRL 126, 182501 (2021)